

REMARKS

Claims 1-8, 10-14, and 16-20 are pending in the present case. Claims 9 and 15 are cancelled herein. Claims 1-8, 10-14, and 16-20 are amended herein. Applicants respectfully request reconsideration in view of the above amendments to the present application, and the arguments set forth below. No new matter is added herein.

REJECTIONS OF CLAIMS UNDER 35 USC 112

Claims 1-9 are rejected under 35 U.S.C. 112 (second paragraph) as indefinite. Claims 1-9 are amended herein. As amended herein, Claims 1 and 2 read as follows:

1. In an electronic device having a display and a processor, a method for providing contrast adjustment for said display comprising:

a) receiving a contrast setting that is user defined via a software graphical user interface, wherein said graphical user interface comprises an interactive slide bar;

b) generating signals representative of the ambient temperature of said display over time;

c) sampling said signals and converting said signals into current temperature values;

d) based on said contrast setting and said current temperature values, computing a contrast adjustment voltage signal for maintaining said contrast setting, wherein said steps c) and d) are performed by said processor; and

e) automatically adjusting contrast of said display by applying said contrast adjustment voltage signal to said display.

2. The method as recited in Claim 1 further comprising:

f) repeating said b) - d), for another contrast adjustment.

Claim 2 recites a method which comprises performing a) through e), "as recited in Claim 1," and the additional element f), which comprises repeating elements b) through d), "as recited in Claim 1," so as to "perform another contrast adjustment." Applicants respectfully assert that the reference of Claim 2 to elements b) – d) of Claim 1 so as to identify its own element f) comports with MPEP § 2173.05(f) – "Reference to Limitations in Another Claim." Applicants also respectfully assert that, as amended herein, Claims 1-9 are not indefinite, and thus comport with 35 U.S.C. 112 (second paragraph).

REJECTIONS OF THE CLAIMS UNDER 35 USC 102

Claims 1-4 and 7 are rejected under 35 U.S.C. 102(e) as anticipated by US Patent No. 6,313,821 to Mizuno, hereinafter the Mizuno reference. Applicants have reviewed the reference cited and respectfully assert it does not anticipate or render obvious the embodiments of the present invention as recited in Claims 1-4 and 7 for the following rationale.

As Applicants understand the reference, Mizuno teaches an image display device for automatically adjusting contrast of a display image. Applicants have reviewed Mizuno and respectfully assert that the image display device taught therein differs from and does not anticipate an embodiment of the present invention as recited in Claim 1 and its dependent claims.

As amended herein, Claim 1 reads as follows:

1. In an electronic device having a display and a processor, a method for providing contrast adjustment for said display comprising:

a) receiving a contrast setting that is user defined via a software graphical user interface, wherein said graphical user interface comprises an interactive slide bar;

b) generating signals representative of the ambient temperature of said display over time;

c) sampling said signals and converting said signals into current temperature values;

d) based on said contrast setting and said current temperature values, computing a contrast adjustment voltage signal for maintaining said contrast setting, wherein said steps c) and d) are performed by said processor; and

e) automatically adjusting contrast of said display by applying said contrast adjustment voltage signal to said display.

Underling added herein for emphasis. Claim 1 recites that the user defined contrast setting is received via a software graphical user interface. The embodiments of the invention as recited in Claim 1 and its respective dependent claims differ from the image display device taught by Mizuno.

Applicants respectfully agree with the section at page 7, in paragraph 15 of the Detailed Action section of the instant Office Action, to the effect that Mizuno "does not expressly teach ... receiving said contrast setting via a software graphical user interface." In as much as Mizuno does not teach receiving the contrast setting via a graphical user interface, the reference does not anticipate the embodiments of the present invention recited in Claim 1 and its respective dependent claims.

Further, Mizuno expressly teaches that the contrast setting is made using a "contrast adjusting unit 7 [that] includes a variable resistor [the resistance of which]

varies in accordance with control by the CPU 6" (Mizuno, C. 4, ll. 4-7). Mizuno goes on to expressly teach:

The display unit 4 displays an image signal from for example, a personal computer (not shown). Other than the image signal from the personal computer, the control voltage and the like [e.g., for contrast control] are input from the contrast adjusting unit 7 to the display unit 4. The contrast of the display unit 4 is adjusted in accordance with the contrast adjusting unit 7.

(Id. at ll. 8-14). Next, Mizuno expressly teaches that "[t]he manually adjusting operation unit 8 manually adjusts the contrast of the display image to a preferable level, and includes push button switches 8a and 8b." (Id. at ll. 15-17; underlining added herein for emphasis).

Applicants respectfully assert that in a variety of electronic devices having a display and a processor, issues of size, related component density and weight, and costs relating to component procurement and assembly are significant issues. Such issues render it desirable to reduce weight, reduce size and concomitantly increase component density, and reduce costs. Costs can be reduced by eliminating, where possible, components that would otherwise have to be purchased. Eliminating such components can further reduce costs by simplifying assembly (e.g., the eliminated components no longer need installation during assembly).

Applicants further respectfully assert that by performing the contrast adjustment function using a software GUI as recited in Claim 1 as amended herein, space and weight is saved because the physical components that are taught by Mizuno to do so are obviated. The space saved allows size reduction or the possibility of increased functionality, such as "recycling" the saved space for use with other components. Obviating the physical contrast control components that are taught by Mizuno eliminates having to either purchase or install them, thus saving costs.

Thus, Applicants respectfully assert that, by expressly teaching the use of manually operated electromechanical controls such as push buttons to manually adjust the contrast setting; Mizuno teaches away from the embodiments of the present invention as recited in Claim 1 and its respective dependent claims. Accordingly, Applicants also respectfully assert that Mizuno does not suggest the embodiments of the present invention as recited in Claim 1 and its respective dependent claims.

Rejections of the Claims Under 35 USC 103

Claim 5 is rejected under 35 U.S.C. 103(a) as unpatentable over Mizuno in view of US Patent No. 5,029,982 to Nash, hereinafter the Nash reference. Claims 6 and 8-9 are rejected under 35 U.S.C. 103(a) as unpatentable over Mizuno in view of US Patent No. 6,496,177 to Burton, hereinafter the Burton reference. Claims 10-11 and 16-17 are under 35 U.S.C. 103(a) as unpatentable over US Patent No. 6,433,769 to Cato, hereinafter the Cato reference, in view of Mizuno. Claims 12 and 18 are rejected under 35 U.S.C. 103(a) as unpatentable over Cato in view of Mizuno and further in view of Nash. Claims 13-15 and 19-20 are rejected under 35 U.S.C. 103(a) as unpatentable over Cato in view of Mizuno and further in view of Burton.

Applicants have reviewed the references cited and respectfully assert that none of the references, alone or in combination, teach, suggest, or render obvious the embodiments of the present invention as recited in Claims 1, 10, and 16, and their respective dependent claims for the following rationale.

Applicants respectfully reassert each and every point asserted above in the discussion of the rejections of claims under 35 USC 102. Applicants respectfully reassert that Mizuno teaches away from, and thus does not fairly suggest the embodiments of the present invention as recited in Claim 1 and its respective dependent claims.

As amended herein, Claims 1, 10, and 16 read as follows:

1. In an electronic device having a display and a processor, a method for providing contrast adjustment for said display comprising:

a) receiving a contrast setting that is user defined via a software graphical user interface, wherein said graphical user interface comprises an interactive slide bar;

b) generating signals representative of the ambient temperature of said display over time;

c) sampling said signals and converting said signals into current temperature values;

d) based on said contrast setting and said current temperature values, computing a contrast adjustment voltage signal for maintaining said contrast setting, wherein said steps c) and d) are performed by said processor; and

e) automatically adjusting contrast of said display by applying said contrast adjustment voltage signal to said display.

10. An electronic device comprising:

a processor coupled to a bus;

a display coupled to said bus and responsive to a contrast adjustment signal;

a temperature sensing circuit for generating signals representative of the ambient temperature of said display over time, and

wherein said processor automatically compensates display contrast based on said ambient temperature by performing a process comprising:

a) receiving a contrast setting that is user defined via a software graphical user interface, wherein

said graphical user interface comprises an interactive slide bar;

b) sampling said signals and converting said signals into current temperature values;

c) based on said contrast setting and said current temperature values, computing a contrast adjustment voltage signal for maintaining said contrast setting; and

d) automatically adjusting contrast of said display by applying said contrast adjustment voltage signal to said display.

16. A palm-top computer system comprising:

a processor coupled to a bus;

a flat panel display coupled to said bus and responsive to a contrast adjustment signal;

a temperature sensitive diode circuit for generating signals representative of the ambient temperature of said display over time, and

wherein said processor automatically compensates display contrast based on said ambient temperature by performing a process comprising:

a) receiving a contrast setting that is user defined via an interactive slide bar of a software graphical user interface displayed on said display;

b) sampling said signals and converting said signals into current temperature values;

c) based on said contrast setting and said current temperature values, computing a contrast adjustment voltage signal for maintaining said contrast setting; and

d) automatically adjusting contrast of said display by applying said contrast adjustment voltage signal to said display.

Underlining added herein for emphasis.

Applicants further respectfully assert that none of the references cited teach or suggest using a graphical user interface (GUI) comprising an interactive slide bar to input a user's contrast setting, as recited in Claims 1, 10, and 16, as amended herein. Cato expressly teaches including a variable resistor 206 (Cato, C. 3, ll. 16-

18) for optionally varying a reference voltage to “keep a set contrast at a user’s desired value” (Id. at ll. 26-27). Nash expressly teaches that adjusting “[t]he variable power supply 34 allows a user to adjust the contrast ... to a desired level” (Nash, C. 2, ll. 30-32). Burton does not teach or suggest using a GUI comprising an interactive slide bar to input a user’s contrast setting, as recited in Claim 1, 10, and 16, as amended herein.

Thus, Applicants respectfully assert that none of the references cited teach or suggest the embodiment of the present invention, as recited in Claims 1, 10, and 16, and their respective dependent claims. Applicants further respectfully assert that in fact, Cato, and Nash teach away from the embodiments of the present invention as recited in Claims 1, 10, 16, which recite using a GUI comprising an interactive slide bar to input a user’s contrast setting. Accordingly, Applicants respectfully assert that none of the references cited, alone or in combination, teach, fairly suggest, or render obvious the embodiments of the present invention as recited in Claims 1, 10, 16 and their respective dependent claims.

CONCLUSION

By the rationale stated above, Applicants respectfully assert that Claims 1-9 as amended herein are definite under 35 USC 112 (second paragraph). Applicants also respectfully assert that, by the rationale stated above, the embodiments of the present invention as recited in Claims 1-4 and 7 are not anticipated under 35 U.S.C. 102(e). Further, by the rationale stated above, Applicants respectfully assert that the embodiments of the present invention as recited in Claims 5-6, 8-9, 10-15 and 16-20 are not fairly suggested under 35 U.S.C. 103(a).

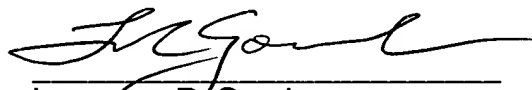
Applicants respectfully assert therefore that Claims 1-8, 10-14, and 16-20 are in condition for allowance. Accordingly, Applicants respectfully request that the rejections of Claims 1-8, 10-14, and 16-20 be withdrawn and that Claims 7-28 be timely allowed.

Please charge our deposit account No. 23-0085, for any unpaid fees.

Respectfully submitted,

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